

Page 1, line 3, after "the present invention relates to a method for preserving raw meat", please insert the following: --and preventing micro growth--

Page 4, line 21, after "refrigeration" please insert the following:

—Generally, two classes of microorganisms are considered to be undesirable. The first class being aerobic and the second class being anaerobic. The anaerobic microorganisms include facultative (having both aerobic and anaerobic metabolic pathways). The aerobic microorganisms cannot survive without oxygen while the anaerobic microorganisms have a non-oxygen requirement for metabolism. It is important to note that iron is an essential element for both organisms.

For both, growth of microorganisms spoil the meat by changing texture, appearance and the development of bad odors. The pathogenic bacteria are those interfering with the human host metabolism and interfere with normal physiology causing effects ranging from the minor to the lethal. The aerobic bacteria are likely to arrive from outside of the host organism. This is in contradistinction from the anaerobic facultative microbes which may be animal borne because they can grow in the host devoid of free oxygen. However, neither bacteria are desirable to have on the meat. It is therefore important to develop ways of eliminating bacterial growth be it anaerobic or aerobic. —

Page 10, line 12, please insert after "quality." —Also provided by the present invention is a method of preventing microorganism growth in meat by exposing raw meat to an atmosphere consisting essentially of carbon monoxide.—

Page 12, line 24, please delete "and".

Page 13, line, please delete ":" and insert therefor --;—.

Page 13, after Figure 13, please insert the following:

—Figure 14 is a graph showing the growth of *E coli* on beef under a defined atmosphere having either untreated or high carbon monoxide atmospheres;

Figure 15 is a graph showing the growth of *E coli* and beef under defined atmosphere having either untreated or low carbon monoxide atmosphere;

Figure 16 is a graph showing the growth of *Pseudomonas* fluorescence on beef under defined atmospheres having untreated atmosphere, low carbon monoxide or high carbon monoxide atmosphere;

Figure 17 is a graph showing the growth of *Staphylococcus aures* on beef under a defined atmospheres, the atmosphere either being untreated or with high carbon monoxide;

Figure 18 is a graph showing the growth of *Listeria monocytogenes* on beef under a defined atmospheres, the atmosphere is being either untreated, low carbon monoxide, or high carbon monoxide;

Figure 19 is a graph showing the growth of *Clostridium prefringens* on beef under defined atmospheres as having either untreated, low carbon monoxide or high carbon monoxide atmospheres;

Figure 20 is a graph showing the growth of *Salmonella Typhimurium* on beef under defined atmospheres, either untreated, low carbon monoxide or high carbon monoxide atmospheres;

Figure 21 is a graph showing the growth of Listeria monocytogenes on poultry under defined atmospheres of either untreated or high carbon monoxide atmospheres;

Figure 22 is a graph showing the growth of Pseudomonas fluorescence on poultry under defined atmospheres of either untreated atmosphere or high carbon monoxide atmosphere; and

Figure 23 is a graph showing the growth of clostridium prefringens on poultry under defined atmospheres of either untreated, low carbon monoxide or high carbon monoxide atmosphere.--

Page 13, line 15, after "container," please insert the following:

—The present invention also provides a method for preventing microorganism growth on preserved meat by exposing raw meat, processed or not, to an atmosphere consisting essentially of carbon monoxide, and subsequently storing the meat in a sealed container.—

Page 15, line 6, please insert:

—The term "microorganisms" is defined as being either aerobic or anaerobic organisms which can survive on meat. These can include, but are not limited to, *E. coli* Pseudomonas fluorescence, *Staphylococcus aures*, *Listeria monocytogenes*, *Clostridium prefringens*, and *Salmonella Typhimurium*.—

Page 16, line 26, please insert:

—The data included herewith have established that the growth of all pathogens was inhibited when meat was treated under a carbon monoxide containing atmosphere. Further, the level of inhibition increases upon the elevation of the carbon monoxide content in the modified atmosphere. Therefore, by exposing meat to an atmosphere containing carbon monoxide, not

only is the meat itself preserved but further, there is an inhibition of pathogen growth on the meat. This inhibition enables the life span of the meat to be increased without sacrificing any safety in distributing the meat to be consumed.-

Page 46, line 1, please insert the following:

-Example 14

Studies were carried out comparing growth of inoculated pathogenic bacteria on fresh meat under three atmospheres. Air and two CO containing modified atmospheres: high CO (95-100%) and low (10%) CO. In low CO MA CO was replaced by an inert gas, nitrogen. Note that in most experiments the CO untreated control was the same for both modified atmospheres. Experiments with *E coli* were carried out on different meat controls.

Conclusions

The data indicate that none of the anaerobic/facultative pathogens packed under CO atmosphere could grow better than when packed under air or nitrogen. In contrast, growth of all pathogens was inhibited under CO containing atmosphere and the level of inhibition was stronger upon elevation of CO content in the modified atmosphere.

As shown in Figures 14-23, the methods of the present invention inhibit the growth of *E coli*, *Pseudomonas* *Staphylococcus aures* *Listeria monocytogenes*, *clostridium prefringens* *Salmonella Typhimurium*. This effect was shown in both beef and in poultry, thus showing that this effect is not limited to use in the beef industry, but can instead be used in other similar industries wherein the growth of micro is undesirable.--